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third volume, in the Continuation, chiefly, we object to *bring about, cast about, counted on, shoved against, resentment exasperated, suspicions afloat, deep stake, infuriated fanaticism, undertook responsibility, prodigal of heroism, progressed, dashed upon the retreating Indians, jaded* [applied to men after a rapid march,] *peppered* [by grape shot,] *patriotick apostolick administrator of the diocese of Louisiana.**

These blemishes are observed, not to detract a particle from the value of the work, but to encourage and promote that classical purity, which is justly required in literary productions, and for the want of which the severest strictures have been made in Europe, upon American publications. The faults of admired authors are apt to be imperceptibly copied.

‘Decipit exemplar vitiis imitabile.’

We wish to see our language cultivated, together with the arts and sciences, that America may have her classical historians, as well as her philosophers and poets. In the progress of improvement, however, we believe no time can be predicted, when the volumes before us will not be viewed as an ornament to our libraries, and an honour to our country.



ART. XII. *Vegetable Materia Medica of the United States, or Medical Botany, containing a botanical, general and medical history of the medicinal plants indigenous to the United States. Illustrated by coloured engravings. By William P. C. Barton, M. D. &c. Professor of Botany in Pennsylvania University. No. 1. Philadelphia, M. Carey & Son, 1817. 4to. pp. 76, plates 6.*

American Medical Botany, being a collection of the native medicinal plants of the United States, containing their botanical history and chemical analysis, and properties and uses in Medicine, Diet and the Arts, with coloured engravings. By Jacob Bigelow, M. D. Rumford Professor and Lecturer on Materia Medica and Botany, in Harvard University. University Press, Hilliard & Metcalf, 1817. No. 1. royal 8vo. pp. 110, plates 10.

WE have in previous numbers devoted some of the pages of this journal to notices of works on natural science, which

* We observe an error in vol. i. p. 85; where Philip's war is mentioned as *already* related; but the relation is subsequent, pp. 256-8.

have appeared in this country, from our own citizens. We have regarded the appearance of these works, as some of the most interesting events in our national history. The minds of our countrymen begin to feel the same influences which give character and peculiarity to our civil and political institutions. Our eyes begin to open on the broad and rich field, which solicits inquiry on every side. What is worth learning begins to be perfectly learnt. Our intellectual structures begin to be polished, and completed. Their materials are more diligently searched for, and though other nations have used many of them, we can hardly be said to be gleaners, for some of our harvests have as yet never been reaped. Men of science among us, are not in search of fragments, or ruins. Our mines can scarcely be said to have been opened. Our forests still continue the first-born of the continent. We have rivers unexplored, and a thousand hills whose flowers have only blossomed for the sun and the air. If we then are destitute of the antiquity of human institutions, we should never forget that we possess the antiquity of nature. If we want what has developed the greatest minds of Europe, we have in its place, what Europe, in its most enlightened portions, must be forever destitute of. The revolutions of nations will not always be wanting here, and the materials of history, poetry, and the drama, will be furnished us, when all that now should most interest us in nature is gone.

There are some periods of the world more favourable for every particular pursuit than others. We should infer, from facts, that the present is peculiarly favourable for the advance of science. We hear from every country almost daily accounts of useful and astonishing discoveries. Men that cannot command the materials of useful knowledge at home, are departing for distant and unknown countries. Others are returning with new facts for the naturalist, and new materials for the speculations of the philosopher, the statesman, and the moralist. There is something very peculiar in this universal intellectual excitement. There is an earnestness in pursuit, which almost promises to leave nothing unexplored, and which might hereafter cause the conquerors of nature to take up the complaint of the victor of the world. It should, however, never be forgotten, that though the objects which are the province, and materials of scientific investigation always remain the same; yet the means of inquiry are inexhaustible. A certain mode of chemical research, for instance, occupies

an age. The system appears perfectly well founded, and its principles seem to be the necessary inductions from well ascertained facts. But the records of this science are full of its revolutions, and prove that the political institutions of man are hardly less stable, than those of his sciences. There is hence something consolatory even in the oblivion, or uselessness of the labours of man. The mind is ever sure of materials for its operations, however vigorous, and thus an intellectual ennui never need to be apprehended.

In the midst of so much mental excitement abroad it is matter of great pleasure to feel its influences at home. To feel that we are anxious to establish intellectual as well as political relations with Europe. That we are returning the obligations we have always been under to foreign science, and that government as well as individuals are concurring to pay the debt.

It would appear from our scientific history, that botany has far exceeded the other departments of natural science, in the degree of interest it has excited. Its first cultivators here, were Europeans, and one of its earliest teachers Dr. Adam Kuhn, a pupil of Linnæus. He lectured on botany in the University of Pennsylvania, and a very fine genus bears his name. In a period not very remote from the present, North America offered a sure harvest for the botanist. Its forests were original in all their characters, and although many of its vegetable productions were similar to those of other continents, these resemblances and identities were to be ascertained. Its flora had never been studied. Its leaves were literally the sport of the winds. The discovery of genera was an easy task, and almost every forest furnished new and highly valuable localities. By comparing the flora of this country with the valuable herbarium of Pallas, striking affinities are found to exist between the vegetable productions of North America, and those of the North of Asia, while others are discovered to be common to both countries. A page might be filled with the names of men who have at different periods come hither, to collect materials for science or fame, and volumes with the marvellous tales which enliven their narratives. The Flora of Virginia, by Gronovius, compiled from Clayton's Herbarium; that of Carolina, by Walter; of North America, by the elder Michaux; and that of the same continent, by Pursh, should not be passed in silence, nor should the History of the Forest Trees of North America, by Michaux the

younger, be unnoticed. In its application of botany to the arts, this work has hardly an equal. The vegetable treasures of this continent which have solicited and received the laborious researches of these and many other distinguished botanists, are immense. The single genus of oak, as botanists have observed, comprehends within the United States more species, than Europe reckons in the whole amount of its trees. With such opportunities for distinction and usefulness it was not to be expected, that our own countrymen would long continue to look in silence, at the successful labours of others. It has happened that botany has been zealously cultivated. It has been taught at our universities, and many valuable works have at different periods been published concerning it.

Among those of our own nation, who have advanced this science, the late professor Barton deserves to be noticed. This writer owes his publick estimation to his botanical researches. He published an elementary work on botany, and a few, not very important papers, on some indigenous medicinal plants. The great work, however, on which his reputation might have safely reposed, viz. the *Flora Virginica*, he did not live to complete. Botany found a zealous and learned cultivator in the late Reverend H. Muhlenburgh of Lancaster, Pennsylvania. The collections he made towards a *Flora*, and the facts he published in Europe, are numerous and highly valuable. His Catalogue contains an extensive list of the native and naturalized plants hitherto known in North America.

Dr. Manasseh Cutler published in the first volume of the *Memoirs of the American Academy of Arts and Sciences*, a paper containing a catalogue of the vegetables of such parts of New England as he visited ; and Dr. Hossack has given the publick a catalogue of the *Elgin Garden* in New York.

We take great pleasure in adding to this very slight sketch of our botany, the work of Mr. Elliott, which is at present under publication. This work, entitled ‘*A Sketch of the Botany of South Carolina and Georgia*,’ is highly honourable to the talents and industry of the author. It takes the first rank among similar works which have appeared among us, and when completed will claim for the author the gratitude of his country, and associate him intimately with the distinguished botanists of Europe. In one department of his work, namely, that of the medicinal properties of the plants he describes, Mr. Elliott has been favoured with the assistance and talents

of Dr. James Macbride, of Charleston. From the honourable mention of this gentleman in the preface of this work, its friends must have been gratified that the author had such an associate. Dr. Macbride, in a tour through some of the states, visited New England, at the close of the last summer. Much of his time was devoted to our botany. In this pursuit his zeal was unbounded, and his high attainments and pure love of this science, were a sure pledge of his constancy, and success. In his death, which happened a few days after his return to Carolina, the science of botany has lost a faithful cultivator. We have made this passing mention of Dr. Macbride, not merely from motives of personal esteem and respect, but because we believed him worthy a place, in an enumeration of those, who had been instrumental in promoting useful science among us.

The method hitherto pursued by foreign and American botanists of carefully collecting the plants of different states, and publishing them as distinct works, will ultimately result in a perfect flora of the country. This method is one of the best that could have been adopted. The region under examination will be thoroughly explored, for the personal reputation of the individuals engaged is too immediately involved, for them to trust to any other than a personal examination of the objects of their pursuit. We should not here be unmindful of the labours of professor Bigelow in this portion of the continent. We regard his *Florula Bostoniensis*, as a fair promise of still greater efforts in his favourite science. Professor Barton has promised the publick a work on the plants of Philadelphia and its environs, entitled *Flora Philadelphica*. Of this work a *Prodromus* has appeared.

The preceding is a very short account of the labours which have been bestowed on the botany of North America. Of travellers who have incidently given some attention to this interesting subject, we have said nothing. We owe a great deal to the Messrs. Bartrams, for what they have done, and when we recollect that the remnant of the collection of Messrs. Lewis and Clark, consisting of only about one hundred and fifty specimens, contained but a dozen plants at present known to be natives in North America, that the greater part were new, containing many new and distinct genera ;—we cannot but join with Mr. Pursh in regretting, that a much more extensive collection, ‘made on their slow ascent towards the Rocky mountains, and the chains of the Northern Andes, had

unfortunately been lost, by being deposited among other things at the foot of those mountains.'—We have consulted that part of Castiglioni's travels in the United States, which relates to our botany. This Italian traveller visited this country in 1785, and remained till the close of 1787. The part of his work devoted to plants is the larger half of the second volume, and embraces those only, which the author thinks the most useful. He gives an account of their reputed medicinal properties, among the Indians and white inhabitants, and an enumeration of their various synonymes.

Concerning the vegetable materia medica of North America, as a particular object of scientific research, a great deal has not been written, and of that very little is to be relied on. The first work of much consequence on this subject was published by a German botanist, Dr. Schoepf, who came to this country during the revolutionary war. Except this work, no very important one on the same subject has until very recently appeared. The collections of the late professor Barton towards a materia medica have added but little to our former knowledge on the subject, and although occasionally a candidate for a medical degree has made some indigenous medicinal article the subject of an inaugural dissertation, it has not always happened that such works have materially increased our confidence in the substances investigated.

Within a very short period, however, the medical and scientific publick have been presented with the first parts of two works, exclusively devoted to American medical botany, and conducted on a similar plan. We refer to the works which stand at the head of this article. It is a circumstance perhaps to be regretted, that two works of this kind are about to be furnished during the same age, or at the same time. Competition, and the good influences of rivalry in other cases can be of little advantage in this. For unless the author has already acquired profound knowledge, in this branch of valuable science, at least, if he is incapable of adding considerably to what is already known, and more especially of making important discoveries, his labours will be useless. Merely to compile, is very frequently to perpetuate error, and where vague report, or even the sanction of very remote authority is at all admitted in works of this kind, as in any degree a basis for opinion, or motive for recommending an article, the profession not only remains unenlightened, but the publick may even be injured. These

works are in their very nature expensive. Artists of various kinds are to be employed for executing the plates, and the form of the volumes is one which very much enhances their expense. It is hence very unfortunate that precisely similar works, as to plan, should appear together. The publick may endure the expense, but labour may be but poorly rewarded. The works themselves may suffer, for the authors may calculate the chances of failure, and bring out their volumes as cheap as they can. We may have indulged our imagination in these remarks, more than our judgment; but as we abstained from felicitation, we thought it proper to state the grounds of our regrets.

Before we enter deliberately on the analysis of these volumes we will stop a moment to consider what is requisite to the individual, who enters on such important scientifick labours, and what we look for in such works. We have thought that he should give some pledge to the publick of his qualifications for his task. We do think he should be enabled from extensive personal observation to substitute truth for what has hitherto been merely conjecture, as to the medicinal powers of our plants; that he should either increase our confidence in their virtues, or satisfactorily show that such confidence has been hitherto misplaced. It should be no part of the design of the author to astonish or amuse. His great object should be to benefit science, and of course ourselves. The greatest accuracy should be studied in the representations of the plants treated of. If the publick are to know them in the field from their portraits in a book, those portraits should be accurate likenesses. If they have the features, and complexions of the real objects, expression need not be laboured after, and the truth of nature should never be sacrificed to the mere gracefulness of manner. We look in such works for accurate botanical descriptions. These should be as perspicuous as their nature will allow. They should be scientifick, without being needlessly technical. The references should only extend to standard works. In its medical department no time or room should be sacrificed to merely vague and indefinite reports. This part of such works is that in which the medical profession is most interested, and it should receive paramount attention. In that portion devoted to vegetable chemistry, the greatest accuracy should be studied. The author, we conceive, in all cases in which an analysis is reported, should institute experiments himself, and if author-

ity be adduced to confirm his own observations, it should not be very remote authority, and if possible, such only as has been recognised by men of science as perfectly satisfactory. Vegetable chemistry is comparatively a modern science. It is but lately that plants have been examined by the best established principles of chemical science, or agreeably to the best methods for such investigations.

It may be objected to these views, that they are too rigid, and that to delay publication until a certain approximation to perfection is made, would be to withhold many useful truths indefinitely from the publick, and perhaps to withhold them forever. Were the ordinary channels of publication closed, there might be some truth in this objection, but while they continue unobstructed, we really see no reason for giving importance by expensive decoration, to unimportant and well known facts. Such works as these under notice should deserve to be permanent. They are not like the ephemeral papers of a medical journal, which are written in haste, unexpensively printed, and then forgotten. On the contrary, their objects constitute a very important department of medical science, and generally, in Europe, have engrossed the better talents of the profession. Finally, we look in works like these for new facts, the results of a cautious and judicious course of experiments on indigenous articles, which have as yet been unnoticed; whether untried species of genera, already known to possess active medicinal properties, or of such genera as have never been medicinally employed. Accurate drawings, and descriptions of such plants, would assist to advance the science, and such investigations of them directly tend to lessen the number of useless articles, which now overburden the *materia medica*. These are the views which have presented themselves to us as perfectly rational; such as we think our readers will concur in, and such as will conduct us through the analysis of these works on medical botany, with the best chances of furnishing an useful account of them to the publick.

Professor Barton details at some length, in the preliminary observations to his work, the benefits that may accrue to the medical profession in America from a careful examination of its vegetable *materia medica*. ‘From a close attention to our *materia medica*,’ he remarks, ‘and from some experiments he has recently made, he is convinced that not a few of our indigenous plants are sufficiently important to be introduced into the daily practice of the physicians.’ (p. 13.) In the

next page we are informed that the drawings and colouring of the plates have been made by the author's own hand ; that he has been three years collecting materials for this work ; that he has delivered three courses of lectures to students concerning the plants to be described, and that he announced to his class his intention to publish this work, in May 1816.

The first plant figured and described in this volume is the *Chimaphila Umbellata* ; vulgarly called *Pippsissewa.... Winter Green*.—This is the *Pyrola Umbellata* of Linnæus. It appears that Michaux long thought it proper to elevate two of the species of *Pyrola* into a genus. Mr. Pursh has accordingly done this, and furnished the generick name; which stands at the head of the first article in this volume. A full botanical history of the plant follows, and also its chemical analysis.—This analysis was not however made by the author. It is the substance of an Inaugural Dissertation, defended by Dr. John Mitchell for a medical degree at the Pennsylvania University in 1803.—The general results of two experiments only are mentioned. The first experiment consisted in pouring alcohol upon half an ounce of the dried leaves. The mixture was exposed to a moderate temperature 24 hours, then filtered. Upon evaporating to dryness, a residuum weighing eighty six grains was obtained. ‘ By the addition of water to this residuum, nineteen grains of gum were procured.’ Second experiment. In this, water was substituted for alcohol in the first instance. Similar steps were then followed, to those just named, ‘ a residuum was obtained weighing forty eight grains. By the addition of alcohol, twenty two grains of resin were procured from this remaining powder.’

From this analysis of Dr. Mitchell, the author turns to the ‘ Medical (we should have preferred medicinal) properties’ of the *Chimaphila*. We have examined this head very carefully. We had already been made acquainted with the diuretick properties of this plant, and had read Dr. Somerville's opinion on its stomachick properties. The late Dr. Barton's paper had also been some time in print, and we had seen the drawing, not very accurate however, of the plant in the fifth volume of the Medico-Chirurgical Transactions. We passed through the pages of Professor Barton's work, which are devoted to a collection of these authorities, and anticipated the additional evidence of the known effects of this plant, which we were to find in the details of the extensive person-

al observation of the author. He informs us he exhibited it in four cases at the marine hospital, under his care, at the navy yard in Philadelphia, with evident good effects. After acknowledging the obligations we are under to English physicians for the knowledge we actually possess with regard to the medicinal properties of this plant, Professor Barton, (p. 27.) observes, ‘and if future and more extensive trials of it in dropsical affections, should confirm the high character given to this plant by Dr. Somerville, we have much reason to congratulate ourselves on the accession to the *materia medica* of so powerful a diuretick ; one, not only divested in its introduction to the stomach of any nauseating or other unpleasant consequences like those of *digitalis* and *squill* ; but actually exerting a roborant effect on that organ, manifestly increasing the appetite, and producing very agreeable feelings in the patient, soon after it is taken.’ We unite sincerely with the author in his expression of congratulation ; but we think he will agree with us, that he has left a wide field of interesting, and highly valuable experiment, with an acknowledged useful article, for the zeal and leisure of some future writer on our ‘*Vegetable Materia Medica*.’ We think also that all under the head ‘*Economical use*’ of this plant might be very properly waved in the next edition, and what is observed on that head, transferred to the ‘*medical properties*.’ An explanation of the plate closes this article.

The next plant contained in this work is the *Sanguinaria Canadensis* of Linnæus ; the *Blood Root*, and *Puccoon* of the vulgar. A very elaborate reference is made to the authors who have written upon the plant, or quoted its character, and to their several works. These with numerous vulgar appellations of the plant occupy a page. The next is occupied with a list of ‘*Synonyma*,’ &c. together with a *descriptio uberior*, taken from the MS. of the author’s *Flora Philadelphica*. There is a grammatical error in the first line of this *descriptio*, which appears to have escaped the writer’s notice ; ‘*Succo fulvo exudans chelidonii*,’ for *succum fulvum*.—The four succeeding pages are occupied with a botanical history of this plant. The root is an interesting part of this vegetable, not merely on account of its medicinal properties, but from the peculiarities of its structure. These peculiarities, however, do not seem to have attracted the attention of the author, or perhaps more correctly, they are not very distinctly contained in his description. The size, and the col-

our are noticed, and something, not very definite however, said of its shape. 'It is commonly of the shape represented in the plate, though not unfrequently, particularly in the new plant, shorter and contorted or bent upwards.' It is important, however, to have this distinctly stated, since the premorse, or bitten appearance is very remarkable in the roots of offsets; it is in fact from the separation of the decayed root from the new one, that this bitten appearance is derived. It is difficult to conceive how this structure should have escaped the author, for it may be observed even in the dried root. We have already alluded to the plate. All the authorities quoted by the author agree that the number of petals composing the corolla is eight. The author himself says about eight. He has counted from seven to fourteen. In the plate, however, the corolla is made up of *nine* petals. This appears to be a departure from authority, if not from nature, for which we perceive no sufficient motive. The small *leaf*, which in the plate is observed to rise from the root, and encircle the stalk of the flower and proper leaf of the plant, is in nature merely a *sheath*. It may be intended for such by the author; if so, the *veins* apparent on it have deceived us. The colouring of the plate of the *Sanguinaria* bears little resemblance to nature. From this plate we see no propriety in the denomination the plant has received. The colouring of the root, in the copies we have seen, is unfortunate. It is any thing but red. We look in vain for the very remarkable and beautiful manner in which the flower is enveloped by the young leaf. Professor Barton has further been totally unmindful of the *length* of the petals, some of which, being longer than others, give the flower a very peculiar shape. If the author had not distinctly stated at the foot of the plate that it was 'drawn from nature by W. P. C. Barton,' we should on viewing it merely have supposed this a copy from Dr. Downey's plate of the *Sanguinaria* in his inaugural dissertation, badly coloured, by an indifferent artist.

A chemical analysis succeeds the description of this plant. This is not made by the author. It should not, however, on that account be passed in silence. The following quotation contains all that is said on this head. 'From the Chemical Analysis of Puccoon, made by Dr. Downey, it appears, that there is a gum, a resin, and a saponaceous or extractive matter in the root; and that the gum is in the greatest abundance. It results also from the same experiments, that the active

principle of the plant resides chiefly in the gum and extractive matter, but especially in the former.' (p. 37.) This analysis deserves notice. It was made in 1803. The author will agree with us, that the improvements made since that period in such analyses, and which are among the best proofs of the rapid advance of chemical science, deserve the notice of every one who wishes to follow its progress, and make it subservient to important purposes. We think he will still further agree with us, on this point, when we inform him, that an analysis of the root of this plant has been recently made, and that it furnishes no evidence of gum, in the substance.—Dr. Downey, however, found this to be in excess, and to constitute the most active part of the vegetable. It would be but to repeat the principles prescribed ourselves in a former part of this article, were we to venture a comment on the unfortunate tendency of the author's credulity in admitting, as authority, the analysis of a medical student, made fifteen years ago, on a subject so interesting, and requiring so much accuracy as the chemical analysis of vegetables.

‘*Medical Properties.*’—The *Sanguinaria Canadensis* is possessed of very striking medicinal properties; it is a very powerful article, producing in excessive doses severe derangements in the system. This plant therefore, which is very common among us, deserves a very careful experimental investigation. The author says, ‘but it is here presented to the physician principally for its emetick power.’ (p. 37.) In the next page, however, we find this declaration; ‘I have never used this plant with a view to its emetick effects.’ The only trials in fact, made by Professor Barton with this article, were with a spirituous tincture of it, in three cases, and with manifest effect, ‘used in the same way as wine bitters.’ The authorities quoted, are Dr. Schoepf, Dr. Dexter of Cambridge, (Boston,) Mass. Dr. Downey, Dr. Thacher, Dr. Barton, and Dr. Allen. Professor Nathan Smith, now of Yale College, is not noticed, although he communicated a very full and valuable paper on this article some years ago, published in the 1st vol. of the London Medical Transactions.—It appears then that Professor Barton has not added a single new fact on the subject of the medicinal properties of the *Sanguinaria Canadensis*.—‘*Economical uses.*’—Dr. Downey again appears, in support of the economical uses of the plant. He employed it as a dye. If what it said of the Maryland

farriers be of any importance, it would have been well to have mentioned some authority to support what 'is said.' An explanation of the plate closes the account.

Cornus Florida—*Dogwood*.—Nearly two pages are occupied with the names of books, authors, synonymes, &c. Under the head of 'Synonyma' the author has anticipated much that would interest us under medicinal properties, and is in fact entirely out of place as it now stands. We refer to what follows the abbreviations *Pharm. Qual. Vis. Usus.* &c. Now all this has nothing to do with *Synonyma*. The three next pages contain a very full account of the botanical history, and p. 48 is headed Chemical Analysis. This analysis is taken from Dr. Walker's Inaugural Dissertation, read in Philadelphia, in what year is not mentioned. We have not met with any other analysis of this plant, and although perhaps we should feel perfectly satisfied with Dr. Walker's, we confess we should have been gratified to have seen his results confirmed, or corrected by a series of well conducted experiments by Dr. Barton.—'Medical properties.'—This tree seems to possess active medicinal properties. It has striking affinities with Peruvian bark, and in some cases may be employed as a substitute, or as an useful auxiliary. 'I have never,' says Professor Barton, p. 54, 'used the Dogwood, in any form as a medicine, and therefore call the attention of our physicians to it, entirely on the authority of those who have written on the article, and frequently employed it.' The professor has therefore added nothing to our previous knowledge of the medicinal powers of this plant.

'*Economical uses.*'—From the firmness and lightness of the wood of the *Cornus Florida*, Professor Barton thinks that it may be advantageously employed for the handles of carpenters' tools, and for the manufacture of fifes, children's whistles, &c. and informs us, that the Creole Negroes of Norfolk, Virginia, substitute it for what is vulgarly called saltstick; and that their fine white teeth are a full proof of its remarkable tooth cleansing superiority. Dr. Walker made a good ink of the powdered bark, 'which was used by Dr. Walker in writing his thesis.' (p. 56.) We again would remark, that we think it is out of place to speak of the uses of plants in epizootick diseases, under the head of economicks. If they cure the diseases of horses or cows, they exert medicinal powers, and should be noticed as exerting such.—Mention is made, we think out of place, of the excellences of

an infusion of the ripe berries of the Dogwood in spirit or brandy, as a ‘morning bitter’ and for ‘common purposes.’ This we do not clearly comprehend. But unless the Professor means a ‘morning bitter’ to be used in *diseases*, or as purely prophylactick, and we should even question the propriety of recommending spirituous tinctures habitually even with this last view, we cannot but seriously regret, that the recommendation found a place in his work at all. To us, such hints take from the dignity of scientifick works.

Triosteum Perfoliatum—Fever root—Red flowered fever root. Of the plate which stands first, and is explained at the end, in this article, we shall take some notice. The leaves are the most prominent parts of the plant. There appears to be what we would call a botanical anachronism in this drawing. The leaves have acquired the size which is nearly peculiar to that state of the plant in which the *fruit* is found perfect, but the plant itself bears *flowers* in the representation. We do not think the author has been happy in his colouring of the flowers. We should hardly call the colour an obscure purple. The shape is that of *buds*, or of any thing else but flowers. The leaf is, in nature, entire. Professor Barton represents it as crenate. Its base is most frequently narrow when the plant is in flower ; it is here represented as very broad. The fruit or berry is of the same hue as the flowers, and in the *descriptio*, is said to be *purpureo-coccineæ*. This, however, does not accord with the description of one of the most original of the cited authorities, viz. Dillenius, who expressly says, on this subject, vol. 1. p. 394. ‘Saturatim ab initio virentes, postea lutescentes ;’ and in the next page of the same work, from another authority, we find the following expressions, ‘floribus obsolete rubris, baccis luteis.’ Now as Dillenius is quoted by the author, it is highly probable they meant the same plant. It is hence perfectly unaccountable to us, why Professor Barton, with such an authority, and of course with the berries before him, should have preferred in colouring his plants, an *obscure purple*, to a *yellow*. We have not been careful to notice the typographical or grammatical errors in this work. In the *descriptio uberior*, of the *Triosteum*, we noticed the following. In the sixth line, *axilis*, for *axillis* ; in the same line *venticilatae*, for *verticillatae* ; in the next, ‘*in quinque lobis auriculatis, incisa,*’ for *in quinque lobos auriculatos, incisa* ; and in the last line, ‘*Baccæ coronatæ, obovatæ, purpureo-coccineæ, tri-loculares, et semina tria dura complectens,*’ for

complexentes. There is no chemical analysis of the *Triosteum* in this work. Its medicinal powers are thus alluded to ; ‘in the quantity of twenty or thirty grains it is a good cathartic.’ It does not appear that the author has made any trials with this plant.

‘*Gillenia Trifoliata*—*Indian Physick*. An account of the ‘medical properties’ of this plant succeeds immediately to the botanical history. Its chemical analysis is wanting. ‘*Gillenia trifoliata*,’ says Dr. Barton, ‘has justly obtained a place in the Dispensatories of our states, under the head of Emeticks. In many respects it has been compared to the officinal *ipecacuanha*.—*It has been said* that the cortex of the root exclusively, is endued with emetick virtue, and the powder of this part has accordingly been uniformly recommended for use.—*It is said* to possess a tonic power, with its emetick virtue, (Barton’s collections,) and hence has been thought peculiarly beneficial in the intermitten fever. I have but little reliance on this opinion, and it is indeed of secondary importance. The dose is thirty grains of the powder for an adult.—*It is said* the country people have frequently used the plant so incautiously, as to be under the necessity of resorting to medical aid. This proves nothing but its activity. ‘Economical use.’—*It is said* that the Indian physick is often given to horses to mend their appetite, and to remove their dyspeptic symptoms. Of this I know nothing myself, neither have I ever heard the manner in which it is administered to these animals.’ p. 69.

In these quotations a very fair specimen is offered of the book under review. The remark of Professor Barton, on a quoted opinion of the late Professor Barton, we hope has more truth in it, than it discovers of deference. Our quotations amount to almost every thing said in the book about the medicinal powers of this species of *Gillenia*. We have quoted them that the publick may judge of their importance, and when we add, that they give a fair specimen of the whole work, we may safely leave it to the same publick to make an estimate of its value and practical utility. We anticipate, however, the few remarks, we intended to make on this volume, for another species of *Gillenia* remains to be noticed, namely the *Gillenia stipulacea*. Of this plant, we learn nothing from Professor Barton’s work, except its botanical history, and what we learn of that, is from a letter, sent to the author by a friend. The department devoted to the ‘medical properties’ of this species contains the following observations. ‘What

has been said by Schoepf, Barton, and others, who have quoted them concerning the virtues and doses of *Spiræa trifoliata*, is applicable to the *Gillenia stipulacea*, for reasons above given. The bark of the root is used ; and the roots should be collected in September, after the tops have died. The dose is the same as that of *Gillenia trifoliata* ; though perhaps a smaller quantity may answer.' (p. 76.) To those who have not the good fortune to procure a copy of Schoepf, or the works of the late Dr. Barton, the reference of Professor Barton will be useless. Those, however, who may procure these works, and are induced to rely on the opinions they contain concerning the medicinal uses of the *Spiræa trifoliata*, may perhaps come to the conclusion, that Professor Barton has performed an act of supererogation in adding the *Gillenia stipulacea* to the American materia medica. It must not be concealed however, that the species of *Gillenia* under notice has been *reported* to possess more active powers than the other plant ; nor must it be forgotten that Professor Barton, who has never made any experiments with the plant, is inclined to think that it will answer in smaller doses than the *Gillenia trifoliata*.

Just as we had closed the foregoing analysis, the second part or number of Professor Barton's work came to hand. It appears to differ from the first principally in its plates and the names, synonymes, and references it contains. Precisely the same manner is observed in treating each plant, and the author as scrupulously withholds his own observations and experience concerning them, or as ingenuously declares he knows nothing of their uses, as he has done in the former number. One of the plants, *Symplocarpus Angustispatha*, as the author calls it, is introduced into his book, without a single medical fact being told of it, either directly or indirectly, and we are at a loss to conceive on what grounds it is intitled to a place in the vegetable materia medica. This, however, is not the only circumstance which has struck us as unfortunate in this volume. Another is the great redundancy of useless references, which not only occupy pages, but which the author could never seriously have imagined, would ever be of the least utility. We cannot indeed visit Japan, nor even Holland nor Germany, to consult authorities for the study of our own plants.

There is one other circumstance, and this is the last we mean to notice, which seems to us peculiarly to be regretted in this number. We now refer to the perpetual recurrence of

errours in the author's Latin, of which no small portion is contained in both numbers of his work. Among the requisites enumerated by us as almost essential to an author of such works as these, we did not insist on, or include high classical or literary attainments. It was to be presumed, as there was no reason to the contrary, that authors on such subjects would carefully avoid every thing which might discover any incompetency to their task, and especially the unnecessary use of a language, of which they might be grossly ignorant. Professor Barton however has needlessly thrown himself into the toils of the Latin language, and certainly we have never met with any one who has extricated himself more miserably. This second part of his work may therefore be further distinguished from the first, by its greater and more frequent violations of classical purity. From many others we have selected the following, as proofs of what has now been asserted ; 'pedales,' for *pedes* ; 'petiola,' for *petioli* ; 'viride,' several times over for *viridi* ; 'linearis,' for *linearibus* ; 'seminis,' for *seminibus* 'stigma globosa,' for *globosum*, 'segmentibus,' for *segmentis* ; the phrase, *consisting of two cells*, is rendered, 'duarum loculorum sistens,' and last, though not least, 'Habitat a Canada ad Georgiam tenuis.'

Now these are not trivial mistakes ; such as might be put to the account of errors of the press. We wish we could find for them such an apology, for in a work of such pretensions, such size, so decorated and so costly, Europe may look for a specimen of our literature as well as our science, and in this view we cannot but regard such abuses of language, even of a dead one, as a serious disgrace to the country. These are not the errors of a hasty composition, which might be venial if found in company with some classical elegance, or even with corrections. They are a fair specimen of the whole, and discover in their writer a radical ignorance, not only of the construction of sentences, of simple syntax, but of the most simple and familiar governments, and even of the declensions of nouns. We think we can hardly be accused of unjustifiable severity in these remarks. An author may fail to advance our science, and with impunity, nay the attempt may be considered honourable ; but we can find no apology for him, who, from gross ignorance, inflicts a deep wound on our literary reputation.

But it is time to say something of the other work which we have placed at the head of this article.

‘Under the title of American Medical Botany, it is my intention to offer to the publick a series of coloured engravings of those native plants, which possess properties deserving the attention of medical practitioners. The plan will likewise include vegetables of particular utility in diet and the arts ; also poisonous plants which must be known, that they may be avoided. In making the selection, I have endeavoured to be guided by positive evidence of important qualities, and not by the insufficient testimony of popular report. In treating of each plant, its botanical history will be given ; the result of such chemical examinations as I have been able to make of its constituent parts, and lastly its medical history. The botanical account will be found more diffuse than is necessary for exclusive botanists. The chemical inquiries are made chiefly with a view to pharmaceutical preparations of each plant, or to interesting principles it may contain. Its medical history will contain such facts, relative to its operation on the human system, as are known to me from my own observation, or the evidence of those, who are qualified to form correct opinions on the subject.’ p. x.

We offer no apology for this quotation from Professor Bigelow’s work. It contains a simple expression of the author’s intentions. It is our duty to examine how far they are realized in the work under review. This volume contains ten plates, and a hundred and ten pages of letter press. We should far exceed reasonable limits, were we to undertake an accurate analysis of every page. We mean to exhibit a concise view of what the author himself has done, and state the evidence which is furnished on authority.

Datura Stramonium—*Thorn Apple*. A botanical description of *Stramonium*, containing an account of its habits, and characters, its familiar, and scientific denominations, with its time of flowering &c. is first distinctly given by the author. Dr. Bigelow considers it probable, that this variety of *Datura* is the *D. tatula* of Linnæus.

‘The distinguishing marks laid down between the two plants are not sufficient to make them distinct species. I have cultivated them both together and watched them throughout their growth, without being able to detect any difference except in colour. Their sensible and medical properties are the same. Sir James Edward Smith has lately informed me, that on consulting the herbarium of Linnæus, the original specimens of *D. Stramonium* and *tatula* did not appear to be more than varieties of the same plant.’ p. 20.

The sensible and medicinal properties of the *Stramonium* are next stated, its effects pointed out, when used in excessive doses, and the means of counteracting its fatal effects. On the authority of Baron Storck of Vienna; of Murray's *Apparatus Medicaminum*; of Dr. Cullen; of Dr. Fisher, president of the Massachusetts Medical Society, and of Dr. Archer, of Maryland, the *Stramonium* is recommended as a powerful article of medicine, and the diseases mentioned, in which it has been found beneficial. 'In a case of *Tic douloureux* of long standing I found the extract, taken in as large doses as the stomach would bear, to afford decided relief. It should be taken in large doses, and the system kept for some time under its influence.' p. 23.

The smoking of *Stramonium* has been strongly recommended by writers in Europe as an efficacious palliative in asthma and some other affections of the lungs. Dr. Bree, it appears, who has written on this disease, did not find the good effects from its use that others had observed.

'Certain it is,' remarks Professor Bigelow, 'that in this country the thorn apple is employed with very frequent success by asthmatick patients, and it would not be difficult to designate a dozen individuals in Boston and its vicinity, who are in the habit of employing it with unfailing relief in the paroxysms of this distressing complaint. The cases, which it is fitted to relieve, are those of pure [purely] spasmodic asthma, in which it doubtless acts by its sedative and antispasmodic effects. In those depending upon effusion of serum in the lungs, or upon the presence of exciting causes in the first passages, or elsewhere, requiring to be removed; it must not be expected that remedies of this class can afford benefit. In several cases of plethoric and intemperate people, I have found it fail altogether, and venesection afterwards to give speedy relief.' pp. 24, 25.

The part of the plant to be used for smoking is next mentioned. The internal use of this medicine on the authority of Dr. Marcet of London, and of Professor Chapman of Philadelphia, and the author's own observations of its beneficial use as an external remedy, are particularly mentioned. The results of the author's chemical examination of *Stramonium*, more particularly with a view of ascertaining the correctness of one detailed in a valuable dissertation of Dr. S. Cooper, are as follows.

‘The same gentleman, Dr. Cooper, states,’ says Dr. Bigelow, ‘that upon evaporating the infusion of Stramonium, he observed a large number of minute crystals, remembling particles of nitre. Thinking it possible that these might be something analogous to the crystals, said to be obtained by Derosne from opium, and by him denominated the narcotic principle, I repeated the experiment by carefully evaporating separate decoctions of the green and dried leaves. No crystals however were discoverable at any stage of the process, either to the touch, or to the eye, assisted by a strong magnifier.’ p. 29.

The formulæ for making the various preparations of this article used in medicine and their doses are next distinctly detailed. Botanical and medical references, together with a description of the plate, close the article *Datura Stramonium*.

Of the *Eupatorium Perfoliatum*, or *Thorough wort*, the next plant in order in this work, the author observes,

‘Every part of the *Eupatorium* has an intensely bitter taste, combined with a flavour peculiar to the plant, but without astringency or acrimony. The leaves and flowers abound in a bitter extractive matter, in which the important qualities of the plant seem to reside. I find this principle to be alike soluble in water and alcohol, imparting its sensible qualities to both, and neither solution being rendered turbid, at least for some time, by the addition of the other solvent. It forms copious precipitates with many of the metallic salts, such as muriate of tin, nitrate of mercury, nitrate of silver, and acetate of lead.’ For the remainder of the analysis, see the work, pp. 35, 36.

The medicinal properties of this plant are those of a tonic stimulant.

‘I have,’ says the author, ‘prescribed an infusion of the *Eupatorium* in various instances to patients in the low stages of fever, where it has appeared instrumental in supporting the strength and promoting a moisture of the skin, without materially increasing the heat of the body. I have also found the cold infusion or decoction a serviceable tonic in loss of appetite and other symptoms of dyspepsia, as well as in general debility of the system. p. 37.

The doses and proportions of this plant, and various references, with an explanation of the plate, close the article.

Phytolacca Decandra—*Poke*. It appears that M. Braconnot has detailed a memoir on the chemical properties of this

interesting article of the *materia medica*, in the seventy second volume of the *Annales de Chimie*. A careful abstract of this memoir follows the analysis of the *Phytolacca*, of Professor Bigelow. The author has repeated the experiments of M. Braconnot, and added others. This valuable portion of the work does not admit of an abstract, and we cannot publish the whole. It deserves, however, the careful attention of the reader.

‘In its medicinal properties,’ says Dr. Bigelow, ‘the root of the *Phytolacca decandra* approaches nearer to *ipecacuanha* than any American vegetable, I have hitherto examined. From abundant experience, the result of many trials made in Dispensary practice, I am satisfied that, when properly prepared, it operates in the same doses and with the same certainty, as the South American emetic. Ten grains of the powder will rarely remain on the stomach, and twenty or thirty produce a powerful operation, by emesis and generally by catharsis.’ p. 46.

Its peculiarities, its advantages and disadvantages are next pointed out. A letter from Dr. Fisher to the author, and the results of experiments in nearly thirty cases, made by Dr. Hayward, and others from an Inaugural Dissertation, by Dr. Shultz, add strong support to what Professor Bigelow says of its valuable emetick effects. As an ointment the *Phytolacca* has been used in *Psora* by Dr. Hayward with marked success, even where sulphur had failed. ‘A case of *tinea capitis* of twelve years’ standing, which had resisted various kinds of treatment, was also cured by this application.’ p. 50. We refer to the sixth volume of the *New England Medical Journal*, for the details contained in Dr. Hayward’s valuable paper.

Arum Triphyllum—*Dragon Root*. The root of this singular vegetable is possessed of an acrid principle, and of a large quantity of a very pure white *fæcula*, resembling the finest arrow root or starch. To ascertain in what its acrid principle resides, Dr. Bigelow has instituted a great variety of experiments, the details of which will be found in his work. The following contains their results.

‘From the above experiments, which circumstances did not permit me to pursue, it appears that the acrimony of the *Arum* resides in a principle having no affinity for water, alcohol, or oil, being highly volatile, and, in a state of gas, inflammable. The products of its combustion, as well as its other affinities, remain to be investigated.’ p. 57.

We are happy from a note to this page to find that the author is engaged in experiments on the acrid principle of vegetables. The acrid principle of the *arum* entirely disappears on exposing the root to the air, or by drying.

‘The fæcula, thus obtained, loses its acrimony on being thoroughly dried, and forms a very white, delicate and nutritive substance.’ It may hence become a very valuable article in the diet of the sick.

Coptis Trifolia—*Gold thread*. The dark sphagnous swamps, which in the northern parts of our continent are covered with a perpetual shade of firs, cedars and pines, are the favourite haunts of this elegant little evergreen. The coldest situations seem to favour its growth, and it flourishes alike in the morasses of Canada and of Siberia. On our highest mountain tops it plants itself in little bogs and watery clefts of rocks, and perfects its fructification in the short summer allowed it in those situations. I have gathered it upon the summit of the Ascutuey in Vermont, and on the Alpine regions of the White mountains. It is here that in company with the *Diapensia* and *Azaleas* of Lapland, the blue *Menziesia*, the fragrant *Alpine Holcus*, and other plants of high northern latitudes, it forms the link of botanical connexion between the two continents. When in situations like this, we seem transported to the frigid zone, and to be present at the point where the hemispheres approach each other, as if to interchange their productions.’ pp. 60, 61.

Of the plant, which interests us so much in its description by the author, and of which a beautiful and accurate plate is given, we are first presented with the sensible and chemical properties. ‘The root of this plant is a pure intense bitter, scarcely modified by any other taste. In distillation it communicates no decided sensible quality to water. The constituent with which it most abounds is a bitter extractive matter, soluble both in water and alcohol.’ p. 63. For the remainder of the analysis, and for its medicinal uses, the result of the author’s own observations, together with its pharmaceutical preparations, we refer our readers to the work itself.

Arbutus Uva Ursi—*Bear Berry*. We pass over this plant without a particular notice. The same mode of investigation, however, it should be remarked, has been pursued by the author with this plant, which governed him in his treatises on the articles already noticed, and we regret we cannot give it more particular attention.

The seventh plate, exhibits a portrait of the *Sanguinaria Canadensis*, commonly called *Blood Root*. This plate appears to us to be an accurate likeness of the object it is designed to represent. In the shape and number of its petals it agrees with nature. Its fine white flowers, in the language of the author, proceed from the bosom of a young, convoluted leaf. The colour of the root is after nature, and the manner in which the new plants are given off is very distinctly exhibited. The flower and leaf are shown contained in their appropriate sheath. Following the botanical description of this fine plant, is a chemical analysis of its root by the author. We can only give the results.

‘The experiments made on this substance, gave evidence of the following constituent principles, viz.

1. A peculiar resin.
2. A bitter principle.
3. An acrid principle.
4. Fæcula.
5. A fibrous or woody portion.’

‘The medical (we have before given our preference to *medicinal*) properties of the *Sanguinaria* are those of an acrid narcotick. When taken in a large dose it irritates the fauces, leaving an impression in the throat for a considerable time after it is swallowed. It occasions heartburn, nausea, faintness and frequently vertigo and diminished vision. At length, it vomits, but in this operation it is less certain than other emetics in common use. The above effects are produced by a dose of from eight to twenty grains of the fresh powdered root.’

The authorities for the medecinal uses of this plant are Professor Nathan Smith, before mentioned, Professor Ives of New Haven, (in a letter to the author,) and the late Dr. James Macbride of Charleston, also contained in a letter to the author.

The eighth plate, is the *Geranium Maculatum*. For the author’s analyses which are principally directed to the examination of its astringent qualities, and the results of his experience with the plant in diseases, we are obliged to refer to the work.

Plate ix. *Triosteum Perfoliatum*—*Fever Root*. The plate to this article agrees with nature, with the description in the book, and with the authorities referred to. The shape and size of the leaf, its elaborate finish, the colour of the flowers, and

berries or fruit, strike us as being peculiarly correct. 'The fruit,' observes Dr. Bigelow, 'is an oval berry of a deep orange colour, hairy, somewhat three sided, crowned with the calyx, containing three cells and three hard, bony furrowed seeds, from which the name of the genus is taken.' (p. 92.) To this description the following note is added;— 'Pursh observes that the flowers and berries are *purple*. In all the specimens I have examined, which have not been few in number, the fruit was of a bright orange colour. If Pursh has seen a plant with purple berries, it is probably a different species from the true plant of Linnæus and Dillenius, which had *fructus lutescentes*.' The late Professor Barton and Dr. John Randall are referred to as authorities for the medicinal uses and effects of the *Triosteum*. Dr. Randall's interesting dissertation, read before the Linnæan Society of New England, contains the details of about thirty cases in which he used this article. The inferences are generally stated, together with an abstract of his experiments, made with a view to discover in which of its constituents its active powers reside. Dr. Bigelow's own experience, though not very extensive with this article, has been sufficient to satisfy him, that it possesses valuable medicinal virtues.

The tenth and last plate in this volume is the *Rhus Vernix*—*Poison Sumach, or Dogwood*.

The objects of the author in introducing this article into his work, appear to be to point out its poisonous properties, the means of remedying them, and the economical uses of which its juice is susceptible. These objects are certainly very interesting, and they are pursued in a manner to render them highly useful. The author submitted the juice of the *Rhus Vernix* to chemical examination, and his experiments are carefully detailed.

In closing our analysis of Professor Bigelow's work, we deem it our duty to remark that the intentions of the author, as detailed in the quotation from his preface, are never lost sight of in the prosecution of his labours. We have accompanied him, and with pleasure, through details of chemical experiments, and of medical investigations. His botanical descriptions have not fatigued, for they have satisfied us. We have seen the author in every page of his book, and have not been less gratified, when he has spoken in his own person, than when he has used the language of another. He has per-

mitted us to enter his laboratory, and to be witnesses of his manipulations ; and among the best recommendations of the articles treated in his work, are the free declarations of his own experience. We have no hesitation in saying explicitly, that the work just analysed has advanced the sciences to which it has been devoted, and that we look forward with earnestness for the remaining volumes. We have not attempted a comparison of these works which we have been reviewing, either as it relates to their plates, or their other contents. Neither do we mean to institute such a comparison now. Our views have been distinctly stated, and we trust adhered to. By the liberality of quotation, these works are their own reviewers. We have furnished the materials of independent criticism,—we yield them to our readers, for we have not left ourselves room to employ them.

ART. XIII. *Letters from the South, written during an excursion in the summer of 1816. By the author of John Bull and Brother Jonathan, &c. &c.* New York, J. Eastburn & Co. 1817. 2 vols.

THESE letters comprise ‘occasional sketches’ of Virginia, and other things. The plan is to make an excursion into Virginia and defray the expenses by writing a book about whatever the ‘regular built traveller,’ as he styles himself, happens to see or think of, during his ‘tour ; which plan he executes with great fidelity, insomuch that his readers would not have been dissatisfied, had he even omitted some parts of what he has accomplished. He announces himself in the title page as the author of *John Bull and Brother Jonathan*, two works of some celebrity in their time ; and intimates in his motto that he has a jocular way with himself, and maintains throughout the journey, the air and pretention of being a very clever, queer fellow. He finds great cause of merriment in the theories about the original peopling of this continent, and seems to have shaken his sides much over geological systems. He has undoubtedly read Tooke’s *Pantheon*, and more or less of *Lempriere’s Classical Dictionary*, for he speaks familiarly of ‘daddy Neptune’—makes an elegant allusion to *Phaëton*, whom he calls a ‘tandem gentleman of ancient times’—introduces the sisters of the said *Phaëton*, who ‘were stiff, upright, slender *tabbies*, he’ll be bound, and were changed into poplars

Days entirely or chiefly fair 18
 do do. do. cloudy 12

Directions of the winds in proportional numbers, viz. S. W. 14
 —N. W. 12—N. E. 9—W. 4—N. 3—S. 3.

The *Cirro-stratus* has been the predominant form of the clouds,
 often accompanied with the *Nimbus* or *Stratus*.



ERRATA.—p. 313, read ‘to organize the militia and *put* the colony in a
 state of defence’—p. 317, line 9, for ‘resemblance’ read ‘semblance’—
 line 3, from the bottom, for ‘souls’ read ‘soul’—p. 323, line 9, for ‘name’
 read ‘names’—p. 360, line 32, for ‘corrections’ read ‘correctness’—p. 379,
 line 11, for ‘same’ read ‘some.’